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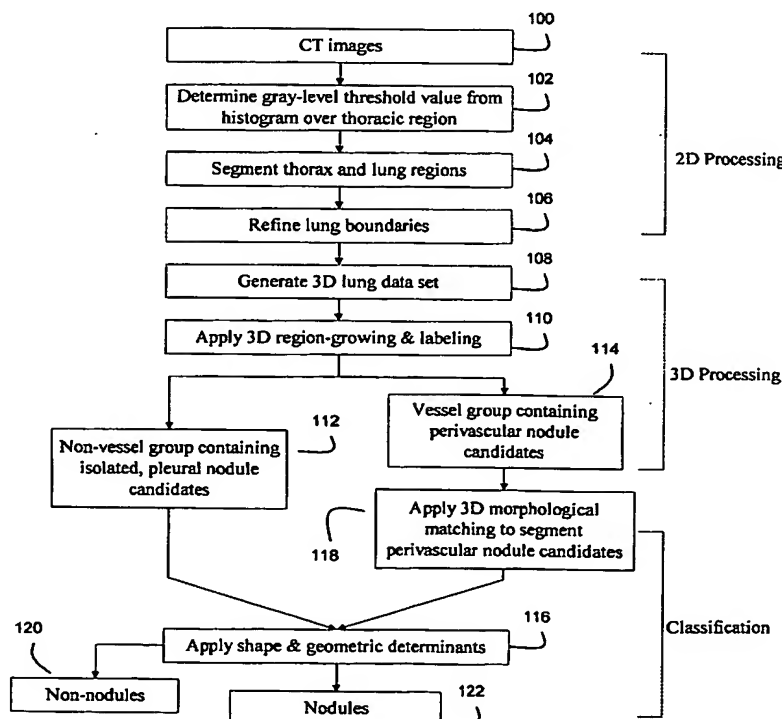
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(54) Title: METHOD AND APPARATUS FOR AUTOMATED DETECTION OF TARGET STRUCTURES FROM MEDICAL IMAGES USING A 3D MORPHOLOGICAL MATCHING ALGORITHM



(57) Abstract: A method for the automated detection of target structures shown in digital medical images, the method of comprising: (1) generating a three dimensional (3D) volumetric data set of a patient region within which the target structure resides from a plurality of segmented medical image slices; (2) grouping contiguous structures that are depicted in the 3D volumetric data set to create corresponding grouped structure data sets; (3) assigning each grouped structure data set to one of a plurality of detection algorithms, each detection algorithm being configured to detect a different type of target structure; and (4) processing each grouped structure data set according to its assigned detection algorithm to thereby detect whether any target structures are present in the medical images. Preferably, the target structures are pulmonary nodules, and a specialized detection algorithm is applied to image data classified as a candidate for depicting perivascular nodules. To segment perivascular nodule candidates from surrounding vessels, the image data is preferably correlated with a plurality of 3D morphological filters.



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